

## What Is Claimed Is:

1. A heat-softening heat-radiation sheet comprising a polyolefin-based heat-conductive composition which comprises a 5 polyolefin and a heat-conductive filler, has a softening point of 40°C or above, has a thermal conductivity of 1.0 W/mK or higher, has a viscosity at 80°C of from  $1 \times 10^2$  to  $1 \times 10^5$  Pa·s and has a plasticity at 25°C in the range of from 100 to 700.
- 10 2. The heat-softening heat-radiation sheet according to claim 1, wherein said polyolefin is a polyolefin comprising an α-olefin polymer and having a softening point of from 40°C to 120°C.
- 15 3. The heat-softening heat-radiation sheet according to claim 1, wherein said polyolefin comprises an α-olefin polymer, an ethylene/α-olefin copolymer and an ethylene/α-olefin/non-conjugated polyene random copolymer.
- 20 4. The heat-softening heat-radiation sheet according to claim 1, wherein said polyolefin comprises an α-olefin represented by the general formula (1):  
$$\text{CH}_2=\text{CH}(\text{CH}_2)_n\text{CH}_3 \quad (1)$$
wherein n is an integer of 16 to 50.
- 25 5. The heat-softening heat-radiation sheet according to claim 3, wherein said ethylene/α-olefin copolymer is represented by the general formula (2):  
$$[(\text{CH}_2-\text{CH}_2)_x-(\text{CH}_2-\text{CRH})_y]_P \quad (2)$$
wherein R is an alkyl group represented by  $-\text{C}_n\text{H}_{2n+1}$  where n is a positive integer; and X, Y, and P are positive integers;

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and having a viscosity at 25°C in the range of from 200 cSt to 1,000,000 cSt.

6. The heat-softening heat-radiation sheet according to  
5 claim 3, wherein said ethylene/α-olefin/non-conjugated polyene random copolymer has a Mooney viscosity (JIS K 6395) at 100°C in the range of from 5 to 50.

7. The heat-softening heat-radiation sheet according to  
10 claim 2, wherein said α-olefin polymer is derived from two or more α-olefins having a different number of carbon atoms.

8. The heat-softening heat-radiation sheet according to  
claim 3, wherein said ethylene/α-olefin copolymer is a mixture  
15 of two or more ethylene/α-olefin copolymers having different viscosities at 25°C.

9. The heat-softening heat-radiation sheet according to  
claim 3, wherein said ethylene/α-olefin/non-conjugated polyene  
20 random copolymer is a mixture of two or more ethylene/α-olefin/non-conjugated polyene random copolymers having different ethylene contents.

10. The heat-softening heat-radiation sheet according to  
25 claim 1, wherein said heat-conductive filler is selected from the group consisting of a metal, an inorganic oxide and an inorganic nitride.